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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/993,986	11/05/2001	Fereidoon Heydari	01-S-045 (1678-47)	7945

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EXAMINER

RODRIGUEZ, GLENDA P

ART UNIT	PAPER NUMBER
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2627

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/20/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

09/993,986

Applicant(s)

HEYDARI ET AL.

Examiner

Glenda P. Rodriguez

Art Unit

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-16, 19, 20 and 22-56 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed:
- 6) ☒ Claim(s) 1-5, 7-16, 19, 20, 22-56 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 2, 4, 5, 7-16, 19-20, 22-56 are rejected under 35 U.S.C. 102(b) as being anticipated by Leis et al. (US Patent No. 5, 862, 005).

Regarding Claim 1, Leis et al. teach a position-burst demodulator, comprising:

An input circuit operable to receive even and odd samples of a first servo position burst (Col. 14, L. 14-35, wherein the position bursts are misaligned by 90°. It would have been obvious to a person of ordinary skill in the art to know that when a sine wave, which is an odd function, is offset by 90° it is then converted to a cosine function, which is an even function. According to Leis et al., after having both even and odd functions, it then obtains the even and odd samples from these even and odd functions. Hence, Leis et al. is equivalent to the even and odd functions as described by the Applicant in the Applicant's Specification in Pages 11-12),

To add the even samples to generate a first sum (See Element 552 in Fig. 14B) and to add the odd samples to generate a second sum (See Element 554 in Fig. 14B);

An intermediate circuit coupled to the input circuit and operable to square the first and second sums (Elements 557 and 558 in Fig. 14B), and to add the squared first and second sums to generate a third sum (Element 559 in Fig. 14B);

And an output circuit coupled to the intermediate circuit and operable to calculate the square root of the third sum (Element 560 in Fig. 14B. See also Col. 9, L. 37-46, L. 62 to Col. 10, L. 1-4 and L. 47-Col. 11, L. 2).

Claim 4 has limitations similar to those treated in the above rejection, and is met by the references as discussed above. Claim 4 however also recites the following limitations: "wherein the samples are the first and second samples (Col. 14, L. 14-35, because the samples come from a sine wave, they are consecutive and hence it is obvious that the samples, when received and are separated by the 90° offset, a first and second samples will be received), and a difference circuit operable to calculate a difference between the square roots of the first and second sums (Element 559, Fig. 14B, wherein the squared values of the first and second samples are then added, wherein the different contributions of each sample are taken into consideration for demodulating the position burst).".

Apparatus claims 5, 9, 10, 11 and 14 are drawn to the method of using the corresponding apparatus claimed in claim 1. Therefore apparatus claims 5, 9, 10, 11 and 14 correspond to apparatus claim 1 and are rejected for the same reasons of anticipation as used above.

Apparatus claim 8 is drawn to the method of using the corresponding apparatus claimed in claim 4. Therefore apparatus claim 8 corresponds to apparatus claim 4 and is rejected for the same reasons of anticipation as used above.

Method claims 16, 19, 20, 23, 26 and 27 are drawn to the method of using the corresponding apparatus claimed in claim 1. Therefore method claims 16, 19, 20, 23, 26 and 27 correspond to apparatus claim 1 and are rejected for the same reasons of anticipation as used above.

Claims 12, 15, 28 and 29 have limitations similar to those treated in the above rejection, and is met by the references as discussed above. Claim 12, 15, 28 and 29 however also recites the following limitations: "calculate a head-position error signal from the sums of the even and odd samples of the first and second bursts only that the accuracy of the error signal is dependent of the timing of the samples with respect to the bursts (See Col. 14, L. 1-17, wherein it is able to detect the positional data for both time synchronous or non-synchronous formats)".

Method claim 24 is drawn to the method of using the corresponding apparatus claimed in claims 12, 15, 28 and 29. Therefore method claim 24 corresponds to apparatus claims (12, 15, 28 and 29) and is rejected for the same reasons of anticipation as used above.

Regarding Claims 2, 13, 22 and 25, Leis et al. teach all the limitations of Claims 1, 12, 20 and 24, respectively. Leis et al. further teach wherein the even and odd samples comprise consecutive samples (Col. 14, L. 5-13, wherein it teaches that the samples come from a sine wave, hence because a sine wave is a continuous function, the samples are consecutive from one another.).

Regarding Claims 7, 30, 33, 35, 37, 39, 41, 43, 45, 47, 49, 51, 53 and 55, Leis et al. teach all the limitations of Claims 5, 1, 8-10, 12, 15, 16, 20, 23, 24, 27, 28 and 29, respectively. Leis et al. further teach wherein the first adder is operable to add the magnitudes of the even samples

Art Unit: 2627

together to generate the first sum and to add the magnitudes of the odd samples together to generate the second sum (See Fig. 14, Elements 557, 558 and 559).

Regarding Claims 31, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54 and 56, Leis et al. teach all the limitations of Claims 1, 5, 8-10, 12, 15, 16, 23, 24, 27, 28 and 29, respectively. Leis et al. further teach wherein the input circuit is operable to invert every other even sample and add the inverted and non-inverted even samples to generate the first sum, and is operable to invert every other odd sample and add the inverted and non-inverted odd samples to generate the second sum (Col. 10, L. 47-63).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Leis et al. in view of Patapoutian et al. (US Patent No. 5, 661, 760). Leis et al. teach all the limitations of Claims 1 and 16. However, Leis et al. further teach wherein the first and second samples comprise average samples. This feature is well known in the art as disclosed by Patapoutian et al., wherein it teaches samples being averaged for detecting positioning errors (See Col. 8, Lines 45-51). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Leis et al.'s invention in order to simplify the samples.

Response to Arguments

5. Applicant's arguments filed 12/29/2006 have been fully considered but they are not persuasive. Applicant argues that Leis et al. does not teach: "wherein an input circuit operable to receive even and odd samples of a first servo burst, to add the even and odd samples to generate the first sum and to add to odd samples to generate a second sum; an intermediate circuit coupled to the input circuit and operable to square the first and second sums, and to add the squared first and second sums to generate a third sum; and an output circuit coupled to the intermediate circuit and operable to calculate the square root of the third sum". Applicant also adds: the Leis et al. invention "has nothing to do with separating the servo position burst into separate even- and odd-numbered samples, summing the even-numbered samples separately from the odd -numbered samples, the squaring the sum of the even-numbered and the odd-numbered samples". Examiner cannot concur with the Applicant because it is not explicitly disclosed that the samples are actually even or odd numbered according to the Applicant's Specification in Pages 11-12. It takes eight samples and labels them as "even" and another eight samples and labels them as the "odd" samples. Therefore any two sets or groups of samples are equivalent, as shown in the Leis et al. invention as cited above in the rejection. Examiner would also like to add that According to the Specification, the "even and "odd" groups are based on taking samples by setting the signal 90 degrees apart according to paragraph [32] of the Applicant's Specification, which is what Applicant has admitted that Leis et al. does in the reply filed on 12/29/06. Hence, the rejection under Leis et al. stands due that it teaches the features claimed by the Applicant.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Glenda P. Rodriguez whose telephone number is (571) 272-7561. The examiner can normally be reached on Monday thru Thursday: 7:00-5:00; alternate Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrea L. Wellington can be reached on (571) 272-4483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Art Unit: 2627


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ANDREA WELLINGTON
SUPERVISORY PATENT EXAMINER